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PART II

DEPARTMENT OF TRANSPORTATION

Materials Transportation Bureau

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Specification 1M Glass Carboy in Expanded Polystyrene Packaging and Cancellation of Certain Obsolete Specification Packagings

[4910-60-M]

Title 49—Transportation

CHAPTER I—MATERIALS TRANSPORTATION BUREAU, RESEARCH AND SPECIAL PROGRAMS ADMINISTRATION, DEPARTMENT OF TRANSPORTATION

[Docket No. HM-117; Amdt. Nos. 171-44, 173-127, 178-54]

SPECIFICATION 1M GLASS CARBOY IN EXPANDED POLYSTYRENE PACKAGING AND CANCELLATION OF CERTAIN OBSOLETE SPECIFICATION PACKAGINGS

AGENCY: Materials Transportation Bureau, Research and Special Programs Administration, DOT.

ACTION: Final rule.

SUMMARY: These amendments to the Department's Hazardous Materials Regulations provide a specification for a glass carboy in an expanded polystyrene packaging, authorize use of this new specification packaging with various materials and delete eight obsolete specification packagings.

These changes will remove the constraints imposed on shippers by exemption requirements without compromising safety, will authorize use of a new specification packaging for certain materials and will eliminate various specification packagings and their authorizations for use because they are obsolete.

EFFECTIVE DATE: May 11, 1979; however shipments may be prepared, offered for transportation and transported in accordance with these amendments beginning March 12, 1979.

FOR FURTHER INFORMATION CONTACT:

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SUPPLEMENTARY INFORMATION: On June 14, 1974, the Hazardous Materials Regulations Board published a notice of proposed rulemaking, Docket HM-117, Notice 74-8 (39 FR 20805), which proposed these amendments. The background and the basis for incorporating these changes in the regulatons were discussed in that notice. Interested persons were invited to submit their views in writing and consideration has been given to all comments received relating to matters within the scope of the notice. The primary drafters of this document are Mario E. Gigliotti, Technical Division, and Edward T. Mazzullo, Standards Division, Office of Hazardous Materials Regulation and George W. Tenley, Jr., Office of the Chief Counsel, Research and Special Programs Administration.

Shipper Responsibility

In the Notice, the Materials Transportation Bureau (MTB) proposed to amend § 173.22 to clarify the shipper's responsibility for compliance with requirements involving specification packagings. This proposal is not addressed in this rulemaking, since its provisions were incorporated in Docket HM-134 (41 FR 38175, September 9, 1976).

Expanded Polystyrene Packaging

In the Notice, the term "polystyrene" was used. In these amendments, the term "expanded polystyrene" now appears in place of "polystyrene." This change has been adopted because polystyrene which is not expanded (or expandable), means a rigid, high density material that has been injection molded into form, or extruded into sheet and thermoformed into shape. It is unlike "expanded polystyrene" which is cellular (foamed), low density material that is produced by applying heat to expandable polystyrene beads. The MTB believes it is important that a differentiation be made between polystyrene and expanded polystyrene because a packaging made of polystyrene is usually brittle (unless modified by rubber or polymers) and may have certain relatively poor mechanical properties. However, packaging made of expanded polystyrene is lightweight, strong, and has excellent energy and shock absorbing characteristics.

In § 178.17, the heading of the proposed specification 1M has been redesignated to read: "Non-reusable glass carboy in non-reusable expanded polystyrene packaging." This heading has been changed to indicate that the glass carboy is not to be reused for hazardous materials. The prohibition on reuse will preclude the carboys from being abused since they will no longer be removed from the original protective expanded polystyrene packaging and placed inside another expanded polystyrene packaging. This position, accepted by the MTB, was suggested by a commenter who noted that glass containers are subject to breakage and to weakening as a result of possible abuse prior to reuse. An informal survey of the present exemption (special permit) holders indicates that glass carboys are normally not reused.

Many comments were received concerning the proposal in § 178.17-3(b)(3), relating to construction requirements of the expanded polystyrene packaging. The majority of the commenters believe that the density requirement can be safely reduced from the proposed minimum two pounds per cubic foot without detracting from the ability of the expanded polystyrene to adequately protect a glass carboy during performance of the free fall drop tests prescribed in § 178.17-5(b)(1).

The MTB believes, based on the testing conducted in this regard, that an optimum density for the expanded polystyrene packaging is 1.7 pounds per cubic foot (pcf), and, therefore, has revised § 178.17-3(b)(3) to require a density for the expanded polystyrene ranging from 1.7 pcf minimum to 2.0 pcf, maximum.

The MTB has also revised § 178.17-4(b)(1) to clarify the requirements for closing an expanded polystyrene packaging with tape. Also, § 178.17-4(b)(2) has been added to provide an alternate means of preparing an expanded polystyrene package for shipment, i.e., by closing with nonmetallic strapping meeting prescribed specifications.

Glass Carboy

One commenter noted that while § 178.17-3(a)(1) would require the glass carboys to be "properly annealed," there is no definition of what constitutes a properly annealed glass carboy. It was recommended that an annealing requirement be specified and a method to determine the level of annealing be included. The MTB agrees. Sections 178.17-3(a)(2) and 178.17-5(a)(1) have been revised to include a requirement that the real temper of the glass carboy be not greater than 5 when tested in accordance with the examination method contained in the American Society for Testing and Materials publication ASTM C148-77, Method A. This publication is incorporated by reference in § 171.7 as part of this rulemaking.

One commenter objected to the proposal in § 178.17-3(a)(2) that the top lip of each carboy must be smooth and even, by stating that the requirement is unclear and not capable of being measured. While the purpose of the requirement was to eliminate potential fracture points, the MTB agrees with the commenter and has deleted this requirement.

A commenter responding to the proposal made in § 178.17-3(a)(4) contended that the establishment of the maximum amount of glass which can be used in connection with the manufacture of the carboys should be deleted because this requirement is not necessary for the glass carboy to meet the minimum performance requirements of the specification. The MTB agrees and has deleted the maximum tolerance reference, while preserving the

minus tolerance limit. These requirements appear in this amendment as § 178.17-3(a)(3).

One commenter recommended deletion of the proposed change in § 178.17-3(a)(5) regarding the minimum glass thickness requirements. The commenter submitted the following statement:

> The proposed wall thickness requirement of 0.075-inch is not necessarily or directly related to the glass container's performance capability. Some of the carboys subjected to the proposed four-foot drop test had wall thicknesses substantially below 0.075-inch and yet did not break. Further, it is not technically feasible to determine by mechanical or electronic means the minimum wall thickness in 6.5-gallon capacity glass carboys. The wall thickness of such carboys can be determined only by destructive testing, i.e., cutting the container.

The MTB agrees with the comments and has removed § 178.17-3(a)(5) from the proposal.

In § 178.17-5(a), the pressure test requirements for the glass carboy have been substantially revised. The MTB disagrees with one commenter that an internal pressure test is neither a necessary nor significant test of a carboy's performance capabilities. The MTB does, however, agree with the commenter's contentions that the proposed internal pressure and hydrostatic pressure tests are different methods of measuring the same capabilities, that the proposed hydrostatic pressure test requiring destruction of at least one-half of one percent of the carboys produced is unnecessarily harsh, and that the requirement to test one out of every two hundred carboys produced is not suited to modern, high volume, production methods. The MTB feels that safety considerations are provided for by requiring a pressure test to be conducted on one carboy from each mold at least every eight hours. In addition, provision has been made for tests using either an instantaneous or a sustained pressure, and for either destructive or non-destructive testing.

In § 178.17-5(b) drop test requirements have been revised to place the responsibility for drop testing on the manufacturer of the expanded polystyrene packaging, to provide periodic testing every 4 months instead of every 6 months and to provide rejection criteria when the packaging fails a periodic drop test. Since the primary purpose of the drop test is to evaluate the ability of the expanded polystyrene packaging to protect the inside glass carboy, the MTB feels that the manufacturer of the expanded polystyrene packaging should be made responsible for this testing. A requirement to perform drop tests at least every 4 months is considered more meaningful that the 6 month interval originally proposed because it should insure at least one periodic test during a production year which could conceivably be less than 6 months long. If packaging defects (such as improper density, bead adhesion, molding, or design) are discovered during periodic drop testing, it is the MTB's opinion that defects in packagings produced prior to the unsuccessful tests will be detectable by examining the packagings using visual inspection, physical measurements, or other testing as appropriate. Therefore, a requirement has been placed on the person performing the drop tests to, upon discovery of a packaging defect, examine packagings on hand produced prior to an unsuccessful test for the defect, and to inform packaging users of defective packagings which have been released.

The MTB on its own initiative has made two changes pertaining to §§ 178.17-1 and 178.17-6. In § 178.17-1(d) and § 178.17-6(c) provisions have been included to allow a glass carboy meeting the requirements of § 178.4 (DOT-1D) to be used with the DOT-1M expanded polystyrene packaging. This option has been provided so that unused DOT-1M glass carboys already in the distribution system (e.g., under exemptions DOT-E 5615 and DOT-E5526) can be used in the shipment of authorized hazardous materials.

On January 9, 1979, personnel from both the MTB and private industry were witness to tests of completed packages made as prescribed by the new Specification 1M. One purpose of the test was to demonstrate the effectiveness of two different types of expanded polystyrene packagings currently being produced. Both types of packagings passed the tests prescribed in § 178.17-5(b)(1) without leakage from or breakage of any of the tested glass carboys.

RESPONSIBILITY FOR COMPOSITE PACKAGING

The provisions of §§ 173.22(a) and 173.24(d) place responsibility on the shipper for compliance with the requirements of Part 178 over which the shipper has control. With regard to the new specification 1M, a general requirement has been added in § 178.17-1(b) to require each glass carboy to fit snugly in its expanded polystyrene packaging. It is felt that this requirement, in addition to the provisions of §§ 173.22(a) and 173.24(d), clearly places responsibility on the shipper for the compatibility of the individual components of the composite packaging and eliminates the need for registering assemblers. Therefore, the proposal to have assemblers of the composite packaging register with the MTB has been deleted.

DELETION OF OBSOLETE SPECIFICATIONS

Prior to publication of the Notice, the MTB had information indicating that specification packagings 1B, 1C, 1E, 28, 28A, 31, 34B, and 43A were no longer being manufactured or used. In the Notice, the MTB proposed to delete the specifications for these packagings from Part 178 and to remove the authorizations for their use wherever thay appear in Part 173. Since no comments were received supporting retention of the specification packagings and their authorizations for use, the Bureau has determined that the packagings are obsolete. Therefore, in keeping with the objectives to simplify and clarify the regulations, the appropriate deletions have been made to Parts 173 and 178 in this amendment.

In consideration of the foregoing, 49 CFR Parts 171, 173, and 178 are amended as follow:

PART 171—GENERAL INFORMATION, REGULATIONS, AND DEFINITIONS

1. In § 171.7, paragraph (d)(5)(viii) is added to read as follows:

§ 171.7 Matter incorporated by reference.

* * * * *

(d) * * *

(5) * * *

(viii) ASTM C148-77 is titled, "Standard Methods of Polariscopic Examination of Glass Containers," 1977 edition.

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PART 173—SHIPPERS—GENERAL REQUIREMENTS FOR SHIPMENTS AND PACKAGINGS

2. In § 173.119, paragraphs (a)(1) and (m)(1) are revised to read as follows:

§ 173.119 Flammable liquids not specifically provided for.

(a) * * *

(1) Specification 1A, 1D, or 1M (§§ 178.1, 178.4, 178.17 of this subchapter). Glass carboys in boxes or expanded polystyrene packagings. Rated capacity may not exceed 5 gallons for Specification 1A. Not authorized for transportation by aircraft.

* * * * *

(m) * * *

(1) Specification 1A, 1D, 1EX (single-trip) or 1M (§§ 178.1, 178.4, 178.6, 178.17 of this subchapter). Glass carboys in boxes, plywood drums, or expanded polystyrene packagings. Rated capacity may not exceed 5 gal-

lons for Specification 1A. Not authorized for transportation by aircraft.

* * * * *

3. In § 173.145, paragraph (a)(1) is revised to read as follows:

§ 173.145 Dimethylhydrazine, unsymmetrical, and methylhydrazine.

(a) * * *

(1) Specification 1D or 1M (§§ 178.4, 178.17 of this subchapter). Glass carboys in boxes or expanded polystyrene packagings. Not authorized for transportation by aircraft.

* * * * *

4. In § 173.221 paragraph (a)(1) is revised to read as follows:

§ 173.221 Liquid organic peroxides, n.o.s., and liquid organic peroxide solutions, n.o.s.

(a) * * *

(1) Specification 1A, 1D, or 1M (§§ 178.1, 178.4, 178.17 of this subchapter). Glass carboys in boxes or expanded polystyrene packagings. Rated capacity may not exceed 5 gallons for Specification 1A. Not authorized for transportation by aircraft.

* * * * *

5. In § 173.222 paragraph (a)(2) is revised to read as follows:

§ 173.222 Acetyl peroxide and acetyl benzoyl peroxide, solution.

(a) * * *

(2) Specification 1A, 1D, or 1M (§§ 178.1, 178.4 178.17 of this subchapter). Glass carboys in boxes or expanded polystyrene packagings. Rated capacity may not exceed 5 gallons for Specification 1A. Not authorized for transportation by aircraft.

* * * * *

6. In § 173.223 paragraph (a)(3) is revised to read as follows:

§ 173.223 Peracetic acid.

(a) * * *

(3) Specification 1D or 1M (§§ 178.4, 178.17 of this subchapter). Glass carboys in boxes or expanded polystyrene packagings. Not authorized for transportation by aircraft.

* * * * *

7. In § 173.245 paragraphs (a)(1) and (a)(3) are revised to read as follows:

§ 173.245 Corrosive liquids not specifically provided for.

(a) * * *

(1) Specification 1A (§ 178.1 of this subchapter). Glass carboys in boxes. Not authorized for transportation by aircraft.

* * * * *

(3) Specification 1D or 1M (§§ 178.4, 178.17 of this subchapter). Glass carboys in boxes or expanded polystyrene packagings. Pressure in the carboy may not exceed 10 pounds per square inch at 130°F. (55°C.). If the package is vented, there may be no significant release of contents to the environment. Not authorized for transportation by aircraft.

* * * * *

8. In § 173.247 paragraph (a)(3) is revised to read as follows:

§ 173.247 Acetyl bromide; acetyl chloride; acetyl iodide; antimony pentachloride; benzoyl chloride; boron trifluorideacetic acid complex; chromyl chloride; dichloroacetyl chloride; diphenylmethyl bromide solutions; pyrosulfuryl chloride; silicon chloride; sulfur chloride (mono and di); sulfuryl chloride; thionyl chloride; tin tetrachloride (anhydrous); titanium tetrachloride; trimethyl acetyl chloride.

(a) * * *

* * * * *

(3) Specification 1A, 1D, 1K, or 1M (§§ 178.1, 178.4, 178.14, 178.17 of this subchapter). Glass carboys in boxes or expanded polystyrene packagings (not permitted for antimony pentachloride or tin tetrachloride, anhydrous). Not authorized for transportation by aircraft.

* * * * *

9. In § 173.248 paragraph (a)(1) is revised to read as follows:

§ 173.248 Acid sludge, sludge acid, spent sulfuric acid, or spent mixed acid.

(a) * * *

(1) Specification 1A, 1D, or 1M (§§ 178.1, 178.4, 178.17 of this subchapter). Carboys in boxes or expanded polystyrene packagings. Authorized for spent sulfuric acid only. Not authorized for transportation by aircraft.

* * * * *

10. In § 173.262, paragraph (a)(1) is revised and paragraph (a)(5) is deleted as follows:

§ 173.262 Hydrobromic acid.

(a) * * *

(1) Specification 1A, 1D, or 1M (§§ 178.1, 178.4, 178.17 of this subchapter). Carboys in boxes or expanded polystyrene packagings. Not authorized for transportation by aircraft.

* * * * *

(5) [Deleted]

* * * * *

11. In § 173.263 paragraph (a)(3) is deleted and paragraphs (a)(5) and (a)(7) are revised to read as follows:

§ 173.263 Hydrochloric (muriatic) acid; hydrochloric (muriatic) acid mixtures; hydrochloric (muriatic) acid solution, inhibited; sodium chlorite solution (not exceeding 42 percent sodium chlorite); and cleaning compounds, liquids, containing hydrochloric (muriatic) acid.

(a) * * *

* * * * *

(3) [Deleted]

* * * * *

(5) Specification 1A or 1K (§§ 178.1, 178.14 of this subchapter). Carboys in boxes. Not authorized for transportation by aircraft.

* * * * *

(7) Specification 1D, 1EX, (single-trip), or 1M (§§ 178.4, 178.6, 178.17 of this subchapter). Glass carboys in boxes, plywood drums, or expanded polystyrene packagings. Pressure in the carboy may not exceed 10 pounds per square inch gauge at 130°F. (55°C.). If the package is vented, there may be no significant release of contents to the environment. Not authorized for transportation by aircraft.

* * * * *

§ 173.264 [Amended]

12. In § 173.264 paragraph (a)(9) is deleted.

13. In § 173.265 paragraph (b)(2) is deleted; paragraph (c)(1) is revised to read as follows:

§ 173.265 Hydrofluosilicic acid.

* * * * *

(b) * * *

(2) [Deleted]

* * * * *

(c) * * *

(1) Specification 1A, 1D, or 1M (§§ 178.1, 178.4, 178.17 of this subchapter). Carboys in boxes or expanded polystyrene packagings. Use of a rubber stopper and gasket is authorized for Specification 1A and 1D carboys only. Not authorized for transportation by aircraft.

* * * * *

14. In § 173.266 paragraph (b)(2) is deleted; paragraph (c)(3) is revised to read as follows:

§ 173.266 Hydrogen peroxide solution in water.

* * * * *

(b) * * *

(2) [Deleted]

* * * * *

(c) * * *

(3) Specification 1D or 1M (§§ 178.4, 178.17 of this subchapter). Glass carboys in boxes or expanded polystyrene packagings. Pressure in the carboy may not exceed 10 pounds per square inch gauge at 130°F. (55°C.). If the package is vented, there may be no significant release of contents to the environment. For Specification 1D, the cushioning must be non-combustible mineral material, elastic wooden-strip packaging, or large elastic cushions such as corks fastened securely in position; the use of hay, excelsior, ground cork, or similar material, whether treated or untreated, is prohibited. Not authorized for transportation by aircraft.

* * * * *

15. In § 173.267, paragraphs (a)(4) and (a)(6) are revised to read as follows:

§ 173.267 Mixed acids (nitric and sulfuric acid) (nitrating acid).

(a) * * *

(4) Specification 1A (§ 178.1 of this subchapter). Carboys in boxes. Authorized only for mixed nitric and sulfuric acid containing not over 17 percent nitric acid and containing at least 33 percent water. Straight-sided carboys must be used; cushioning must be incombustible mineral material, elastic wooden-strip packing, or large elastic cushions, such as cork, fastened securely in position. The use of hay, excelsior, ground cork, or similar material, whether treated or untreated, is prohibited.

* * * * *

(6) Specification 1D or 1M (§§ 178.4, 178.17 of this subchapter). Glass carboys in boxes or expanded polystyrene packagings. Authorized only for mixed nitric and sulfuric acid, containing not over 17 percent nitric acid and containing at least 33 percent water. Pressure in the carboy may not exceed 10 pounds per square inch gauge at 130°F. (55°C.). If the package is vented, there may be no significant release of contents to the environment. For Specification 1D, cushioning must be incombustible mineral material, elastic wooden strip packing, or large elastic cushions such as cork fastened securely in position; the use of hay, excelsior, ground cork, or similar material, whether treated or untreated, is prohibited.

* * * * *

16. In § 173.268 paragraphs (f)(1) and (f)(3) are revised to read as follows:

§ 173.268 Nitric acid.

* * * * *

(f) * * *

(1) Spec. 1A or 1K (§§ 178.1, 178.14 of this subchapter). Straight-sided carboys in boxes.

* * * * *

(3) Specification 1D or 1M (§§ 178.4, 178.17 of this subchapter). Glass carboys in boxes, or expanded polystyrene packagings. Pressure in the carboy may not exceed 10 pounds per square inch gauge at 130°F. (55°C.). If the package is vented, there may be no significant release of contents to the environment.

* * * * *

17. In § 173.269 paragraph (a)(2) is revised to read as follows:

§ 173.269 Perchloric acid.

(a) * * *

(2) Specification 1A, 1D, 1K, or 1M (§§ 178.1, 178.4, 178.14, 178.17 of this subchapter). Glass carboys in boxes or expanded polystyrene packagings. Not authorized for transportation by aircraft.

* * * * *

§ 173.270 [Amended]

18. In § 173.270 paragraph (a)(4) is deleted.

§ 173.271 [Amended]

19. In § 173.271 paragraph (a)(5) is deleted.

20. In § 173.272 paragraphs (i)(15) and (i)(16) are revised to read as follows:

§ 173.272 Sulfuric acid.

* * * * *

(i) * * *

(15) Specification 1A or 1K (§§ 178.1, 178.14 of this subchapter). Carboys in boxes. Not authorized for transportation by aircraft.

(16) Specification 1D or 1M (§§ 178.4, 178.17 of this subchapter). Glass carboys in boxes or expanded polystyrene packagings. Not authorized for transportation by aircraft.

* * * * *

21. In § 173.276 paragraph (a)(1) is revised to read as follows:

§ 173.276 Anhydrous hydrazine and hydrazine solution.

(a) * * *

(1) Specification 1D or 1M (§§ 178.4, 178.17 of this subchapter). Glass carboys in boxes or expanded polystyrene packagings. Not authorized for transportation by aircraft.

* * * * *

22. In 173.277 paragraph (a)(2) is revised to read as follows:

§ 173.277 Hypochlorite solutions.

(a) * * *

(2) Specification 1A, 1D, or 1M (§§ 178.1, 178.4, 178.17 of this subchapter). Glass carboys in boxes or expanded polystyrene packagings. Not authorized for transportation by aircraft.

* * * * *

23. In § 173.278 paragraph (b)(2) is revised to read as follows:

§ 173.278 Nitrohydrochloric acid.

* * * * *

(b) * * *

(2) Specification 1A, 1D, or 1M (§§ 178.1, 178.4, 178.17 of this subchapter). Glass carboys in boxes or expanded polystyrene packagings. Rated capacity may not exceed 5 gallons for Specification 1A and not over 6.5 gallons nominal capacity for Specifications 1D and 1M. Not authorized for transportation by aircraft.

24. In § 173.291 paragraphs (a)(1) and (a)(2) are revised, and paragraph (a)(7) is deleted as follows:

§ 173.291 Flame retardant compound, liquid.

(a) * * *

(1) Specification 1A (§ 178.1 of this subchapter). Carboys in boxes which must be closed, and when reused must be reconditioned and tested, as provided in the specification. Not authorized for transportation by aircraft.

(2) Specification 1D or 1M (§§ 178.4, 178.17 of this subchapter). Glass carboys in boxes or expanded polystyrene packagings. Pressure in the carboy may not exceed 10 pounds per square inch gauge at 130° F. (55° C.). If the package is vented, there may be no significant release of contents to the environment. Not authorized for transportation by aircraft.

* * * * *

(7) [Deleted]

* * * * *

25. In § 173.295 paragraph (a)(3) is revised to read as follows:

§ 173.295 Benzyl chloride.

(a) * * *

(3) Specifications 1A, 1D, or 1M (§§ 178.1, 178.4, 178.17 of this subchapter). Glass carboys in boxes or expanded polystyrene packagings. Not authorized for transportation by aircraft.

* * * * *

26. In § 173.346 paragraph (a)(13) is revised to read as follows:

§ 173.346 Poison B liquids not specifically provided for.

(a) * * *

(13) Specification 1A, 1D, or 1M (§§ 178.1, 178.4, 178.17 of this subchapter). Glass carboys in boxes or expanded polystyrene packagings. Not authorized for transportation by aircraft.

* * * * *

27. In § 173.348 paragraph (a)(2) is revised to read as follows:

§ 173.348 Arsenic acid.

(a) * * *

(2) Specification 1A, 1D, or 1M (§§ 178.1, 178.4, 178.17 of this subchapter). Glass carboys in boxes or expanded polystyrene packagings. Not authorized for transportation by aircraft.

* * * * *

28. In § 173.349 paragraph (a)(2) is revised to read as follows:

§ 173.349 Carbolic acid (phenol) liquid.

(a) * * *

(2) Specification 1A, 1D, or 1M (§§ 178.1, 178.4, 178.17 of this subchapter). Glass carboys in boxes or expanded polystyrene packagings. Not authorized for transportation by aircraft.

* * * * *

PART 178—SHIPPING CONTAINER SPECIFICATIONS

§§ 178.2, 178.3, 178.7, 178.8, 178.9, 178.12, 178.15 and 178.18 [Deleted]

29. Sections 178.2, 178.3, 178.7, 178.8, 178.9, 178.12, 178.15 and 178.18 are deleted.

30. Section 178.17 is added to read as follows:

§ 178.17 Specification 1M; non-reusable glass carboy in non-reusable expanded polystyrene packaging.

§ 178.17-1 General requirements.

(a) Compliance is required in all details.

(b) Each glass carboy must fit snugly in its expanded polystyrene packaging.

(c) The glass carboy and expanded polystyrene packaging may not be used again after contents have been removed.

(d) A Specification 1D (§ 178.4 of this subchapter) glass carboy manufactured prior to January 1, 1979 may be used in place of the carboy described in this section, but the Specification 1D carboy must be previously unused and may not be subsequently reused after contents have been removed.

§ 178.17-2 Capacity.

Carboy may not exceed 6.5 United States gallons nominal capacity, 7.0 United States gallons overflow, tolerance plus or minus 10 fluid ounces.

§ 178.17-3 Construction requirements.

(a) Glass carboy:

(1) Each carboy must be machine blown with threads in the neck of the glass carboy for closing by a screw cap.

(2) Each carboy must be annealed and have a real temper not greater than 5.

(3) The weight of each carboy must be 14 pounds or greater with a tolerance of minus eight ounces.

(b) Expanded polystyrene packaging:

(1) Expandable polystyrene must be molded to form a protective outside packaging.

(2) This packaging must consist of a top and bottom section which interlock. Each section must be molded with a cavity to maintain a snug fit with the carboy.

(3) The density of the expanded polystyrene may be no less than 1.7 pounds per cubic foot, and no greater than 2.0 pounds per cubic foot.

(4) The minimum thickness of the expanded polystyrene must be 1 inch.

§ 178.17-4 Closure.

(a) Glass carboy:

(1) A gasketed or lined threaded screw cap is required. A vented closure must be provided when prescribed in Part 173 of this subchapter.

(b) Expanded polystyrene packaging:

(1) Except as provided in paragraph (b)(2) of this section, weather resistant, pressure sensitive cloth or other suitable tape must be circumferentially applies at the mating areas of the top and bottom section to prevent separation. The tape must be at least 2½ inches in width and have a tensile strength of not less than 50 pounds per inch of width. Tape must overlap both top and bottom sections circumferentially by not less than one inch. Tape ends must overlap a minimum of three inches.

(2) The two-section expanded polystyrene packaging may be closed for shipment by means of one or more vertical non-metallic straps of at least ½ inch in width and having a tensile strength of not less than 600 pounds.

§ 178.17-5 Tests.

(a) Glass carboy.

(1) *Annealing test.* After annealing, each glass carboy must have a real temper no greater than 5, when examined in accordance with the American Society for Testing and Materials publication ASTM C148-77, Method A. One carboy must be taken from each side row and one carboy from a center row of the annealing lehr at least every three hours during manufacture, and examined for temper number. If during polariscopic examination, it is determined that any carboy in a certain row has a real temper greater than 5, all carboys within that row must either be rejected or re-annealed to comply with the prescribed test specification. Production back to the last approved examination must be quarantined, resampled and examined in accordance with the prescribed test procedure, after which production may be released if in conformance, or re-annealed to comply, or rejected.

(2) *Weight test.* Each day one carboy randomly selected from each mold must be weighed. If is fails to meet the weight requirement of § 178.17-3(a)(3), production back to last successful weight test from that mold must be quarantined and tested for weight or rejected. Non-conforming carboys must be rejected.

(3) *Hydrostatic pressure test.* One carboy must be taken from each mold at least every eight hours during manufacture and subjected to a minimum internal hydrostatic pressure of 40 p.s.i.g. instantaneous or 13 p.s.i.g. for one minute. If a carboy from any moldbreaks when subjected to the minimum internal pressure, four additional carboys from the same mold must be tested. If one or more of the four additional carboys breaks, all carboys from that mold produced since the last successful pressure test must be quarantined and tested for compliance or rejected.

(4) *Reports and records.* The manufacturer of the glass carboy or a person who performs these tests for the manufacturer must prepare a report on the test prescribed in paragraphs (a) (1), (2), and (3) of this section. The manufacturer of the glass carboy must retain the report on the results of each test for at least three years following the date of the test. These reports must be available for examination by representatives of the Department.

(b) Expanded polystyrene packaging:

(1) *Drop test.* Randomly selected samples of completed packages, with carboys filled with water to capacity and closed as for shipment, must be

subjected to drop tests onto an unyielding surface. A minimum of six packages must be tested, each not required to be subjected to more than one drop. A complete test cycle consists of the following:

(i) Two units dropped flat on bottom from a height of four feet;

(ii) Two units dropped flat on side from a height of four feet; and,

(iii) Two units dropped flat on top from a height of four feet.

(2) *Results and testing frequency.* Each package in one test cycle must pass the test without leakage from or breakage of the glass carboy. If any package fails, the condition causing failure must be determined and corrected and additional testing conducted until a successful test cycle is obtained. Testing must be performed as follows:

(i) At the start of initial production from each mold, and upon any change in source of resin, type of resin, or process method. Tests must also be performed when any component or the design of the packaging is changed. Production may not commence until test requirements have been satisfied.

(ii) Periodically, at least every four months. If periodic testing indicates a packaging defect, packagings on hand produced subsequent to the last successful test date must be examined by appropriate means, and rejected if found defective. Users of the packagings must be advised of defects in packagings released prior to an unsuccessful test. Production may not commence until test requirements have been satisfied.

(3) *Records and testing responsibility.* The manufacturer of the expanded polystyrene packaging, or a person who performs these tests for the manufacturer, must conduct the testing prescribed in paragraphs (b)(1) and (b)(2) of this section and prepare a report on the test results. Reports must be retained by the manufacturer of the expanded polystyrene for three years from the date of test. Reports must be available for examination by representatives of the Department of Transportation.

§ 178.17-6 Markings.

(a) The marking required by this section must be legible and in characters at least one inch in height. Sections 173.24(c)(1) (ii) and (iv) do not apply to the glass carboy and expanded polystyrene packaging. The marking provisions of § 172.312 apply.

(b) No person may mark any carboy or any expanded polystyrene packaging with the specification identification "DOT-1M" unless:

(1) The carboy or expanded polystyrene packaging is manufactured in compliance with this specification, and

(2) The manufacturer has a registration number (M****) from the Materials Transportation Bureau, Department of Transportation, Washington, D.C. 20590.

(c) Except for Specification 1D glass carboys marked in accordance with § 178.4-4, the following markings must be embossed on the bottom of each carboy:

(1) DOT-1M;

(2) NRC;

(3) Year of manufacture; and

(4) Registration number (M****) of the manufacturer.

(d) The following markings must be embossed on the bottom of each expanded polystyrene packaging:

(1) DOT-1M;

(2) NRC;

(3) Year of manufacture; and

(4) Registration number (M****) of the manufacturer.

(49 U.S.C. 1803, 1804, 1808; 49 CFR 1.53.)

NOTE.—The Materials Transportation Bureau has determined that this document constitutes a non-major regulation under Executive Order 12044 and DOT implementing procedures (43 FR 9582). A regulatory evaluation is available for review in the docket.

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